

US HEALTH – UNIT 1

NUTRITION & EXERCISE

**WHAT TO KNOW
WHEN
CHOOSING
HEALTHY FOODS**

What You Will Learn?

- We will identify the functions and sources of the foods we need.
- We will identify the sources of vitamins and minerals
- We will learn how to read the nutrition label and identify the five elements required on all food labels

CHOOSING HEALTHY FOODS

WHAT SHOULD **WE EAT**?
WHAT SHOULD **WE AVOID**?

PROTEINS



FATS



GOOD FATS

vs.

BAD FATS



CARBOHYDRATES



VITAMINS & MINERALS



CHOOSING HEALTHY FOODS

PROTEINS

There are two kinds of proteins

Complete – contains all essential amino acids.

- They regulate body processes, supply energy, form keratin for the skin, hair and nails and collagen in bone and other connective tissue.

- Example meat, fish, poultry, milk, eggs and yogurt.

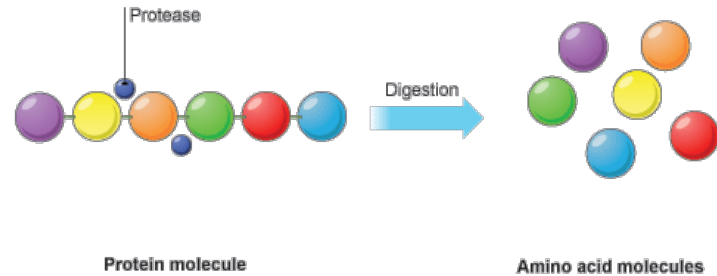
Incomplete – a protein from plant sources that does not contain all the essential amino acids.

- Example grains, legumes and nuts and seeds.



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Amino Acids



- Amino acids are organic compounds that combine to form protein. Amino acids and proteins are the building blocks of life.
- Proteins help:
 - Grow
 - Repair body tissue
 - Perform many other body functions
 - Increase muscle mass & strength
- Amino acids can also be used as a source of energy by the body.

Quick Quiz

- Name three sources of complete proteins?
 - Meats
 - Poultry
 - Eggs
 - Fish
 - Milk

Quick Quiz

- Define an Incomplete Protein
 - a protein from plant sources that does not contain all the essential amino acids.
- What are the three categories of Incomplete proteins?
 - grains, legumes and nuts and seeds

CHOOSING HEALTHY FOODS

Carbohydrates

- The main source of energy for the body.
- They include sugars, starches and fiber.
- 4 calories of energy per gram of food.
- Excess carbs are stored as fat.
- Sources of carbs include: vegetables, beans, potatoes, pasta, breads, rice, bran, popcorn and fruit.



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There are two types of Carbohydrates

Simple Carbs

- Broken down quickly by the body to be used as energy.
- Found naturally in foods such as fruits, milk, and milk products.
- Found in processed and refined sugars such as candy, table sugar, syrups, and soft drinks.

Complex Carbs

- Made up of sugar molecules that are strung together in long, **complex** chains.
- Found in foods such as peas, beans, whole grains, and vegetables.
- Both simple and **complex carbohydrates** are turned to glucose (blood sugar) in the body and are used as energy.

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Examples of Simple Carbs

- Baked goods (including bread) made with white flour
- Cake
- Candy
- Carbonated drink
- Chocolate
- Cookie
- Corn syrup
- Fruit juice
- Fruit preserve or jam
- Fudge
- Honey
- Whole milk
- Plain, full fat yogurt
- Most packaged cereals
- Pasta made with white flour
- Table sugar



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Examples of Complex Carbs:

- Apple
- Apricot
- Artichoke
- Asparagus
- Banana
- Blackberry
- Black current
- Blueberry
- Broccoli
- Brown rice
- Brussels sprout
- Buckwheat
- Buckwheat bread

Cabbage
Carrot
Cauliflower
Celery
Cherry
Cranberry
Cucumber
Dill pickle
Dried apricot
Eggplant
Garbanzo bean
Grapefruit
Kidney bean
Kiwi
Lemon
Lentils

Lettuce
Low fat yogurt
Lychee
Melon
Multi-grain bread
Museli
Navy bean
Oat bran bread and cereal
Oatmeal
Okra
Onions
Orange
Peach
Pear
Pinto bean
Plum
Potato

Prune
Radish
Raspberry
Skim or low fat milk
Spinach
Split pea
Soybean
Soy milk
Strawberry
Turnip green
Wild rice
Watercress
Whole barley
Whole meal bread
Whole meal flour
Whole meal pasta
Yam
Zucchini

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FATS

- A nutrient that provides energy and helps the body store and use vitamins.
- Provide more than twice the number of calories supplied by proteins and carbohydrates.
- Fats store and transport fat-soluble vitamins such as A,D,E and K.
- Fats are stored as fat tissue that surrounds and cushions internal organs.

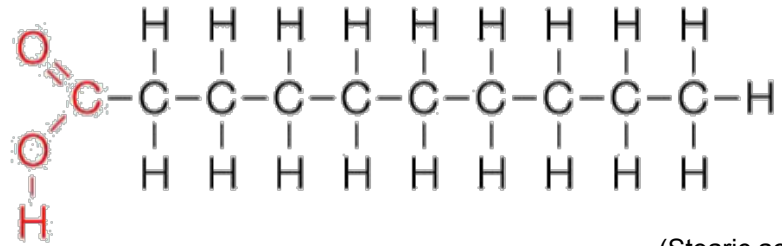
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FATS

There are different types of fats. Can you name them?

- ❖ Saturated
- ❖ Unsaturated
- ❖ Poly unsaturated
- ❖ Trans Fats

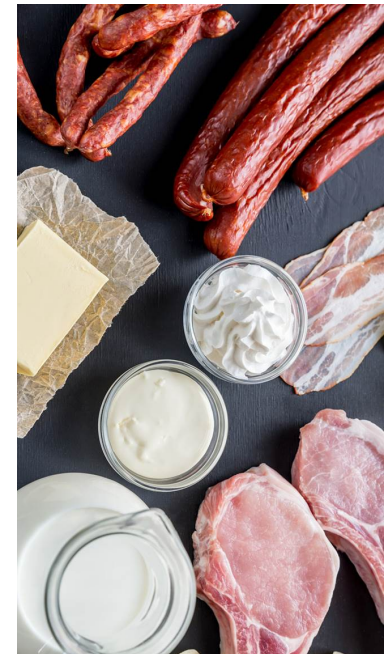
Saturated Fats



(Carboxyl group)

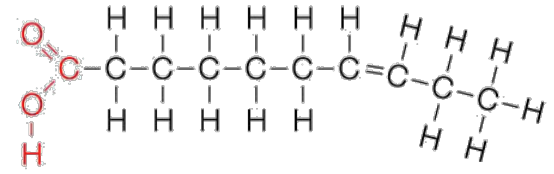
(Stearic acid)

- **SOLID** at room temperature
- No double bonds between the Carbons because all available bonding sites are filled with a hydrogen atom. So the molecule has a well defined structure.
- All foods have a mix of unsaturated and saturated.
- Even healthy foods like chicken and nuts have small amounts of saturated fat, though much less than the amounts found in beef, cheese, and ice cream.
- Sources of saturated fat include:
 - Pizza and cheese
 - Whole and reduced fat milk, butter and dairy desserts
 - Meat products (sausage, bacon, beef, hamburgers)
 - Cookies and other grain-based desserts
 - Mexican fast food dishes



Unsaturated Fats

Unsaturated



- Are **liquid** at room temperature and considered beneficial fats. They have double bonds between carbon atoms, which break up the chain of hydrogen molecules and create gaps, allowing the fats to liquefy at room temperature!
- Mostly found in foods from plants, such as vegetable oils, nuts, and seeds.
- Improve blood cholesterol levels
- Ease inflammation
- Stabilize heart rhythms
- There are two types of “good” unsaturated fats:

Monounsaturated fats	Polyunsaturated fats
Olive, peanut, canola oils (mostly mono with some poly)	Sunflower, corn, soybean, flaxseed , canola oils
Avocados	Walnuts
Nuts such as almonds, hazelnuts, and pecans	Flax seeds
Seeds such as pumpkin and sesame seeds	Fish

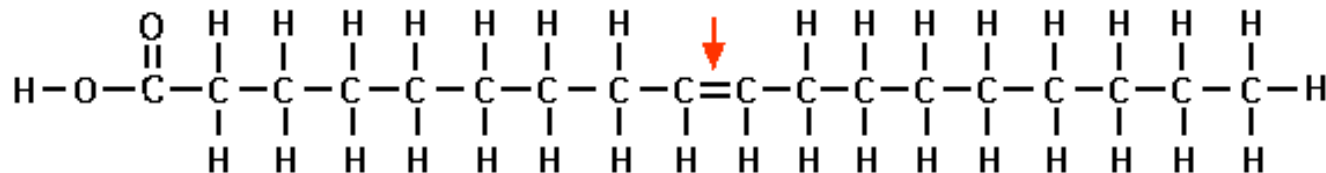
Polyunsaturated Omega-3

- Omega-3 fats are an important type of polyunsaturated fat.
- The body can't make these, so they must come from food.
- An excellent way to get omega-3 fats is by eating fish 2-3 times a week.
- Good plant sources of omega-3 fats include flax seeds, walnuts, and canola or soybean oil.
- Higher blood omega-3 fats are associated with lower risk of premature death among older adults, according to a study by HSPH faculty.

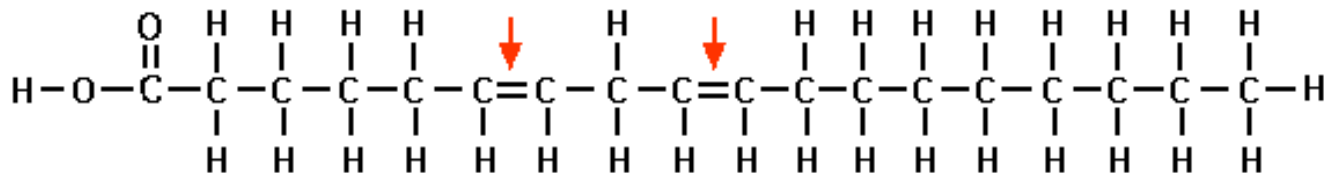


Mono vs. Polyunsaturated Fatty Acids

Oleic Acid- Monounsaturated Fatty Acid



Linoleic Acid- Polyunsaturated Fatty Acid



Trans-Fatty Acids

- Can be made in the gut from most animals
- Can be created industrially by adding hydrogen atoms to foods or oils to make them more solid → increased saturation
- Transfer LDLs and lower HDLs
- Increase risk for heart disease, stroke, diabetes, etc.





Cholesterol

- An organic, waxy, fat-like molecule (modified steroid) produced by ALL animal cells
- Used to build cell membranes
- Adds flexibility to animal cells so we can fluidly move
- Travels around the body as low or high density lipoproteins
- LDL is bad because it is transported in arteries which carries blood from your heart to your body.
- HDL is better because it carries cholesterol to the liver where your body removes it as waste.

